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ABSTRACT

Response differences between phone and face-to-face procedures are small and can be ignored for most research applications. Using the appropriate methods and experienced interviewers, initial cooperation is the same on telephone and face-to-face interviews. There may be slightly higher refusal or don't know responses and shorter answers to open-ended questions on the phone because respondent suspicions may be higher while motivations to talk are not as great. This becomes especially important when the telephone is used for screening respondents using threatening questions. Research dealing with new methods for improving telephone screening is very important, but additional research on differences in responses between phone and face-to-face methods are unlikely to yield findings that are of practical importance. (Author/BW)

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TELEPHONE METHODS IN SURVEY RESEARCH: THE STATE OF THE ART

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Data collection methods can best be evaluated by use of the concept of total survey error. Total survey error includes not only sampling variances, but also sample biases and response effects. From this perspective, telephone procedures compare very favorably to alternative data collection methods in a wide range of applications.

Sampling Variances

Let us assume that a researcher has a fixed level of resources and wishes to minimize total survey error. Sampling variances are an inverse function of the square root of sample size, which in turn is a function of the variable interviewing costs. Face-to-face interviewing is by far the most expensive since more than half the costs involve interviewer travel to locate respondents. In recent years, face-to-face interviewing has become even more expensive both because respondents are less often at home and automobile expenses have soared. Telephone procedures are only one half to one third as expensive as face-to-face methods, but mail procedures are cheaper still. Thus, if one looked at only sample size for a given cost, mail would be preferred followed by phone.

Sample Biases

In most surveys, however, sampling variances are only a small part of the total survey error. Sample biases are usually several times larger than sampling variances except for very small, special samples. How do face-to-face and phone interviews compare? Non-telephone households are no longer a serious problem on national studies since they account for only about five percent of households. Even careful face-to-face surveys probably cannot locate five percent or more of all households, although not

necessarily the same ones. Non-telephone households are still an important problem in some rural Southern areas.

How do cooperation rates compare by method once the household is located? All else equal, phone and face-to-face surveys achieve about the same level of cooperation and both are higher than that obtained from most mail surveys. Phone procedures are more effective in locating hard to reach respondents than are face-to-face surveys, but obtain a slightly higher refusal rate from respondents who are located. Note that these general conclusions hold regardless of the subject matter. Most data collectors know that virtually all refusals come before the first question is even asked.

As should not be surprising, the qualities that make for a good phone interviewer are not identical to those that make a good face-to-face interviewer. Thus, if one does a comparative experiment between phone and face-to-face procedures using experienced face-to-face interviewers, the face-to-face methods usually appear superior; if one does the same exeriment using experienced phone interviewers, phone methods appear superior.

Another myth believed by inexperienced researchers is that telephone interviews, if possible at all, must be very short. Again the experience of virtually all data collectors is that the length of the interview depends on the salience of the topic to the respondent and not on the method of data collection. Phone interviews of an hour or more on salient topics have been conducted with no more difficulty than face-to-face interviews.

Mail procedures sometimes achieve high cooperation rates when the topic is highly salient and when the questionnaire is fairly short. For many studies, however, mail cooperation rates are substantially lower than

those obtained by personal procedures raising the possibility of large sample biases.

Given that phone and face-to-face methods do not differ in overall cooperation, is there any evidence of differential willingness to answer sensitive questions. Again the general answer is no. A few researchers have reported a higher refusal rate on sensitive questions such as income on the telephone as compared to face-to-face. (Groves and Kahn, 1979; Schmiedeskamp, 1962). In some cases, this is probably a function of improper adaptation of a face-to-face question to telephone methods. We do not reject the alternative possibility that it is more difficult to provide information about the survey's legitimacy over the phone than face-to-face. This is even more a problem if the threatening questions are asked as screening questions at the beginning of the survey.

Response Effects

While respondents are willing to answer questions, there is no assurance that the answer will completely reflect actual behavior. An interview is a social encounter and, as has often been demonstrated, respondents will tend to answer questions in socially desirable way. (Bradburn and Sudman, 1979). Thus, it is not at all surprising that there is substantial underreporting of socially undesirable behavior and overreporting of socially desirable behavior. The question to be discussed now is whether method of administration-phone versus face-to-face versus self-administered has any impact on these tendencies.

To summarize the findings before presenting the details, comparisons of methods get mixed results. In those cases where differences are observed, they tend to be small both absolutely and relative to other effects such as the threat of the question and the way it is worded. The

results do not provide a very strong confirmation of the hypothesis that has been advanced that less personal methods produce more accurate information on threatening questions.

Let's look first at socially undesirable behavior. In a Chicago study we asked respondents if they had every been arrested for drunken driving and whether they had ever declared bankruptcy. (Bradburn and Sudman, 1979, Ch.1, Locander, 1976). These questions were embedded in a study dealing with attitudes toward city services including traffic and the courts. Validation information was available from court records. The results indicated no significant differences between face-to-face, telephone and self-administered responses. If anything, the self-administered reporting is a little worse than the phone and face-to-face which is the opposite of what one expects. Singer in a recent review of other surveys found one where persons were more candid on the phone and by mail than in face-to-face interviews, two others where fewer socially undesirable answers were given on the phone than face-to-face and several others where there were no significant differences. (Singer, 1979; the studies cited by Singer and other comparative studies are given in the references.)

The results are slightly clearer for questions where socially desirable answers are possible. Self-administered forms result in a lower overstatement of socially desirable behavior than do phone or face-to-face interviews. In Singer's review, two studies found higher levels of socially desirable answers on the phone than in face-to-face interviews and two found lower levels of social desirability on the phone. In other studies there were no differences.

An earlier review by Sudman and Bradburn of several hundred studies showed only small differences between phone and face-to-face methods, but larger differences between these personal methods and self-administered questionnaires. (Sudman and Bradburn, 1974). Given these non-findings, the practical researcher would probably select a data collection method on the basis of factors other than response effects.

Level of Respondent Effort on the Telephone

There is some evidence by Groves and Kahn that respondents do not put quite as much effort into their task on the phone as they do face-to-face. (Groves and Kahn, 1979). The chief measures of this effect are the fraction of don't know answers by phone and face-to-face and the length of answers to open-ended questions. Thus, on a group of 14 demographic items, the proportion "don't know" answers was 6.1 percent on the phone and 5.3 percent face-to-face. Comparing 41 attitudinal items, the proportion "don't know" was 8.8 percent on the phone and 8.0 percent face-to-face. Some of these differences may have been function of interviewer inexperience, but even if they are completely the result of the telephone method, the average differences are small, although consistent.

Somewhat larger differences are observed in the number of responses to open-ended questions. Thus, on a question asking "What do you think are the most important problems facing this country?" about 70 percent of face-to-face respondents mentioned three or more problems after interviewer probing as compared to 59 percent on the telephone.

This finding is consistent with the general finding that interviews are shorter on the telephone than face-to-face when the same information is gathered. From a cost perspective, telephones reduce the amount of

socializing that occurs, probably at the expense of some loss in richness of response. It may be possible to develop questionnaires or training procedures for interviewers that increase the length of responses on the phone, but that is in the future.

The Respondent Task

Face-to-face procedures provide the greatest flexibility in what is required of the respondent. Skip instructions may be used by interviewers without the respondent being aware that branching is occurring. This is clearly not possible in self-administered questionnaires where even simple skip instructions confuse some respondents and complex instructions result in very high error levels. Skip instructions are not only possible in telephone interviewing, but the use of CATI (Computer Assisted Telephone Interviewing) methods makes it possible using computer memory to have even more complex skips than in face-to-face interviews.

Visual cues such as cards and pictures are possible in face-to-face and self-administered mail surveys, but not on the telephone. While identical procedures are not possible on the telephone, alternative methods have been developed that appear to be as, or even more, valid than the traditional procedures. Thus, on that most threatening of all questions, household income, the traditional face-to-face procedure involved handing respondents a card with a list of income ranges and asking them for the letter that designated their total household income. The telephone procedure uses a series of branching questions as follows:

What was the approximate annual income from employment and from all other sources for all members of your household, before taxes, last year in 1980? Was it $15,000 or more, or less than that?

IF MORE		IF LESS	
Was it more than $20,000?	No (Stop)	Was it less than $10,000?	No (Stop)
	Yes		Yes
Was it more than $25,000?	No (Stop)	Was it less than $8,000?	No (Stop)
	Yes		Yes
Was it more than $30,000	No	Was it less than $5,000?	No
	Yes		Yes

Thus, in four or fewer yes-no questions one obtains a bracketing of household income. This example illustrates one of the most common techniques in telephone questionnaire construction--using more questions, but simplifying the questions so a yes-no answer is possible.

Some studies require respondents to look at records or to read something and then react to it. It might appear that these would be impossible to conduct on the phone, but this is not always the case. Several successful studies have been conducted by first sending the respondents material to read and/or copies of the questionnaire and then telephoning to obtain the responses. These studies have mainly involved institutional surveys and not populations or households.

Other Uses of Telephone Methods

In many surveys, researchers are interested in special populations that may be rare or difficult to locate. As a general rule, the rarer the population, the greater the advantage of telephone screening procedures, even if the actual interview will be conducted face-to-face. Telephone procedures are especially efficient if there is some geographic clustering

in the special population, as would be the case with most ethnic groups. In this situation, there are many geographic areas where there are no members of the special population. Phone procedures similar to those used with random digit dialing (Waksberg, 1978) make it possible to identify such areas rapidly and at little cost. These procedures use a single call to a randomly selected number and then additional calls to numbers in the same bank if an eligible respondent is located.

Another use of the telephone is to make advance appointments with households for face-to-face interviewing. This greatly reduces wasted travel time and has no negative effect on cooperation. (Sudman, 1967). In institutional surveys, the telephone is very useful for locating the person in the institution who is knowledgeable about a research topic. Sending a self-administered questionnaire to this person greatly improves cooperation over merely sending the same questionnaires to the head of the organization.

Summary

To summarize the findings, response differences between phone and face-to-face procedures are small and can be ignored for most research applications. Using the appropriate methods and experienced interviewers, initial cooperation is the same on telephone and face-to-face interviews. There may be slightly higher refusal or don't know responses and shorter answers to open-ended questions on the phone because respondent suspicions may be higher while motivations to talk are not as great. This becomes especially important when the telephone is used for screening respondents using threatening questions. I would assign a high priority to research dealing with new methods for improving telephone screening. Additional research on differences in responses between phone and face-to-face methods, however, are unlikely to yield findings that are of practical importance.

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